

Pranav Minasandra, Ph.D.

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Interests Novel and generally applicable theories of behaviour in animals; methods to explore behavioural dynamics. I am particularly interested in the dynamics of behaviour at the intersection of multiple timescales, and the *behavioural algorithms* used by animals to express individual, collective, and social behaviour.

Experience **Postdoc** | Max Planck Institute of Animal Behaviour, Konstanz, Germany 2024 - now
IMPRS-QBEE Postdoc Awardee.

Ph.D. | Max Planck Institute of Animal Behaviour, Konstanz, Germany 2020 - 2024
Magna cum laude
Thesis: “Exploring sequences of behaviour across scales and species.”
Also affiliated to: International Max Planck Research School of Quantitative Behaviour, Ecology, and Evolution; and the University of Konstanz.

M.Sc. | Indian Institute of Science (IISc), Bengaluru, India 2019 - 2020
Master of Science in Biology.
Research at the Centre for Ecological Sciences, IISc.

B.Sc. (Research) | Indian Institute of Science (IISc), Bengaluru, India 2015 - 2019
Major in Biology.
Research at the Centre for Ecological Sciences, IISc.

Publications Peer-reviewed publications

1. Gall, G. E., Demartsev, V., **Minasandra, P.**, Baldoni, C., Cain, K. E. & Quinn, J. S. Examining Combinatoriality within the Pūkeko Vocal Repertoire. *Animal Behaviour*. 123431. doi:[10.1016/j.anbehav.2025.123431](https://doi.org/10.1016/j.anbehav.2025.123431) (2026).
2. **Minasandra, P.**, Grout, E. M., Brock, K., Crofoot, M. C., Demartsev, V., Gersick, A. S., Hirsch, B. T., Holekamp, K. E., Johnson-Ulrich, L., Nayak, A., *et al.* Behavioral sequences across multiple animal species in the wild share common structural features. *PNAS* **122**. e2503962122. doi:[10.1073/pnas.2503962122](https://doi.org/10.1073/pnas.2503962122) (2025). [Press coverage].
3. DeNicola, V., Mezzini, S., Bursac, P., **Minasandra, P.** & Cagnacci, F. Effects of vasectomy on breeding-related movement and activity in free-ranging white-tailed deer. *Movement Ecology*. doi:[10.1186/s40462-025-00554-5](https://doi.org/10.1186/s40462-025-00554-5) (2025).
4. Grout, E. M., Ortega, J., **Minasandra, P.**, Quin, M. J., Crofoot, M. C., Strandburg-Peshkin, A. & Hirsch, B. T. Whole Group Tracking Reveals That Relatedness Drives Consistent Subgrouping Patterns in White-Nosed Coatis. *Animal Behaviour* **216**. 175–193. ISSN: 0003-3472. doi:[10.1016/j.anbehav.2024.08.010](https://doi.org/10.1016/j.anbehav.2024.08.010) (2024).
5. **Minasandra, P.**, Jensen, F. H., Gersick, A. S., Holekamp, K. E., Strauss, E. D. & Strandburg-Peshkin, A. Accelerometer-based predictions of behaviour elucidate factors affecting the daily activity patterns of spotted hyenas. *Royal Society Open Science* **10**. 230750. doi:[10.1098/rsos.230750](https://doi.org/10.1098/rsos.230750) (2023).
6. Kunjar, S., Strandburg-Peshkin, A., Giese, H., **Minasandra, P.**, Sarkar, S., Jolly, M. K. & Gradwohl, N. Link updating strategies influence consensus decisions as a function of the direction of communication. *Royal Society Open Science* **10**. 230215. doi:[10.1098/rsos.230215](https://doi.org/10.1098/rsos.230215).
7. **Minasandra, P.** & Isvaran, K. Truncated power-law distribution of group sizes in antelope. *Behaviour* **157**. 541–558. doi:[10.1163/1568539X-bja10012](https://doi.org/10.1163/1568539X-bja10012) (2020).

Pre-prints and work in-prep

8. Minasandra, P. Anticipating others' future behaviours alters collective movement and enhances survival. *biorxiv* **122**. 2025–08. doi:[10.1101/2025.08.14.670290](https://doi.org/10.1101/2025.08.14.670290) (2025). [pre-print].
9. Minasandra, P., Planas-Sitjà, I., Roche, D. & Sridhar, V. H. TracktorLive: a real-time multi-object tracking and response delivery package. [Software available on [GitHub](#)].
10. Minasandra, P., Demartsev, V., Johnson-Ulrich, L., Manser, M. & Strandburg-Peshkin, A. Spatiotemporal interplay of vigilance, movement, and collective behaviour in groups of meerkats. [Ch. 3 of Dissertation, available [online](#)].
11. Grout, E. M., Hass, C. C., Minasandra, P., Thomas, M., Ashbury, A. M., Ortega, J., Crofoot, M. C., Hirsch, B. T. & Strandburg-Peshkin, A. The vocal repertoire of white-nosed coatis: structural features, temporal dynamics, and social variations. [in review].

Awards and fellowships

ISBE Travel Award

Registration fees and travel costs to ISBE conference 2026.

2026

Best Paper Award—University of Konstanz

Chosen from among several nominations. [200 €]

2025

Nominated: Schmidt Science Fellows

One of ten doctoral graduates nominated by the Germany-wide Max Planck Society.

2024

IMPRS Postdoctoral Award

6 months of pay at the scale of a postdoctoral researcher. [32,350 €]

2024 - 2025

ISBE Travel Award

2500 AUD [\approx 1,500 €].

2024

DAAD - Graduate Student Scholarship Programme

Nominated after evaluation of my proposal. [\approx 60,000€]

2020 - 2024

Kishore Vaigyanik Protsahan Yojana

Govt. of India scholarship for exceptional undergraduates in science. *All India Rank : 135*

2015 - 2020

Included stipend and contingency

Mentorship

Juee Dhar

Role: Mentor and Thesis Advisory Committee member. *Doctoral thesis:* Sleep social dynamics in baboon groups.

Amlan Nayak

Role: Mentor and primary co-advisor. *Master's thesis:* Spatial variation of vigilance in meerkats.

Ananya Passi

Role: Co-advisor *Summer research:* Mathematical modelling of habitat use and population dynamics.

Talks and posters

[Invited] Talk at Laboratory for the Conservation of Endangered Species

Centre for Cellular and Molecular Biology, Hyderabad

2025

“Three short stories in animal behaviour”

[Invited] CES Seminar Series

Indian Institute of Science, Bangalore

2024

“Exploring sequences of behaviour in the wild across scales and species”

International Society of Behavioural Ecology Meeting

Melbourne, Australia

2024

“Sequences of behaviour show a common statistical structure across species”

Gessellschaft für Primatologie Annual Conference 2024
Konstanz, Germany
“How animals behave: Sequences of behavior show a common statistical structure across species”

Descriptive & Normative Models of Collective Behaviour 2022
School of Mathematics, University of Leeds
“Looking into hyena daily activity patterns using accelerometers”

Animal Behaviour Society - Virtual Seminar 2021 2021
“Behavioural classifier provides insights into spotted hyena behaviour”

Teaching **Introduction to Git**
Instructor and organiser: Biannual workshop offered at the MPI of Animal Behavior.

Introduction to remote code servers like GitHub
Instructor and organiser: Biannual workshop offered at the MPI of Animal Behavior.

L^AT_EX for academic documents
Instructor and organiser: Annual workshop offered at the MPI of Animal Behavior.

Quantitative Ecology: Research Design and Inference 2019
Teaching assistant: Taught coding in R, conducted several classes, graded assignments, managed course website.

Technical skills *Programming languages and related*
Python, Julia, R, Bash, L^AT_EX, and C. HTML, CSS, and git. Familiarity with agentic code generation.

Specialised computational skills
Machine learning; Parallel processing and Inter-Process Communication; Agent-based models; Analysis of complex multivariate time-series data.

Mathematical modelling
Dynamical (PDE) models incorporating spatial and stochastic variables; Probability models; Numerical simulations of all the above.

Other academic services **Reviewing**
Methods in Ecology and Evolution; PLOS One; Integrative and Comparative Biology; Animal Behaviour.

Representation 2024 - 2025
Postdoc representative at the Max Planck Institute of Animal Behaviour.

References **Dr Ariana Strandburg-Peshkin,**
Max Planck Institute of Animal Behavior
astrandburg@ab.mpg.de **Dr Kavita Isvaran,**
Indian Institute of Science
kavita@iisc.ac.in

Dr Andrew Berdahl,
University of Washington
berdahl@uw.edu **Prof Meg Crofoot,**
Max Planck Institute of Animal Behavior
mcrofoot@ab.mpg.de